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COURSES IN FORESTRY AT CORNELL

ISSUED BY THE DEPARTMENT OF FORESTRY
NEW YORK STATE COLLEGE OF AGRICULTURE
AT CORNELL UNIVERSITY, ITHACA, NEW YORK



THE CORNELL FORESTRY BUILDING

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A CIRCULAR OF INFORMATION FOR
PROSPECTIVE FORESTRY STUDENTS

ITHACA, NEW YORK

JULY, 1915



NEW YORK STATE COLLEGE OF AGRICULTURE DEPARTMENT OF FORESTRY

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FACULTY IN FORESTRY

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 JOHN BENTLEY, Jr., B.S., M.F., Assistant Professor of Forestry.

Students in the Department of Forestry receive instruction also from a corps of professors and instructors in the College of Agriculture, the College of Arts and Sciences, and the College of Civil Engineering.

For the college year the three terms begin at the following periods, respectively: First term, the last week of September; second term, the second week of February; third term, the second week of June.





LOOKING EAST FROM THE FORESTRY BUILDING

The alternation of woodlot areas and farm lands on the Cornell University property. The steeper slopes are being replanted with forest trees. A section of the marginal road around the campus buildings is shown in the immediate foreground; in the valley below are the experimental plots used for plant breeding.

COURSES IN FORESTRY AT CORNELL



AMONG other advantages, the neighborhood of Ithaca, New York, the home of Cornell University, is especially favorable to the study of forestry. The region, typical of a large part of New York State, is one of diversified farms and woodland, and is near enough to the extensive wooded tracts of the Adirondacks and the Catskills to make these forests readily accessible for instructional purposes.

Under the three-terms system of the New York State College of Agriculture, full advantage can be taken of these favorable surroundings. Forestry is a part of the still wider field of agriculture, as is recognized in the federal Department of Agriculture, which includes the Forest Service; therefore the courses of instruction in the Cornell Department of Forestry are intimately correlated with those offered in the other departments of the College of Agriculture. Whether a student desires only a general knowledge of forestry, such as should be a part of the equipment of every educated man or woman; whether he wishes an adequate knowledge of woodlot forestry; whether he wishes to devote his attention to some definite phase of the subject, as wood technology; or whether he plans to enroll in the regular technical course, fitting himself for the practice of forestry as a profession,—in any of the cases the opportunities at Ithaca afford a wide range.

For those who desire only a general knowledge of forestry a number of courses are provided that may be taken in connection with work in other departments of the College of Agriculture or of the other colleges of Cornell University.

On the college domain are numerous woodlots typical of conditions which the New York State farmer has to meet on his own farm. The problems here given to the student have a direct, practical bearing on situations which he is likely to confront later; on other land controlled by Cornell University he has an opportunity to see and to take part in extensive tree-planting operations.

Any one who wishes only a specialized course, such as wood utilization, can obtain such a course, either as a regular or as a special student. Short popular courses in forestry are also given, both in the winter (short) course and in the summer session of the College of Agriculture.

OUTLINE OF THE PROFESSIONAL COURSE

If the student is enrolled in the professional course, he will, during the summer terms of the years when he is a senior and a graduate student, learn to know the real forest of the great North Woods, and from his work there will learn how to apply the fundamental principles of forestry to the forests of other regions.

The work of the freshman and sophomore years in the Department of Forestry at Cornell University is largely devoted to securing a thorough grounding in the natural sciences, in the principles and practice of surveying and civil engineering, in chemistry and physics, and in English. In common with the underclassman in other departments of the College of Agriculture, the student in forestry is required to take certain courses in the subjects mentioned above. Along with these he also gets, in his first two years, invaluable practice and training in military science and tactics, which at Cornell, as in all land grant colleges, forms a required part of the student's work.

But, while the forestry course maintains strict standards, and demands of its students faithful performance of their duty in classroom and laboratory, the time is



NORTHEAST FROM THE FORESTRY BUILDING

An area where experimental thinnings and plantings can be made on university property under the very windows of the forestry buildings

not all spent in unremitting hard work. For those athletically inclined, the freshman and sophomore years offer opportunities of trying for one or another of the 'varsity teams, or at any rate of seeing, from the inside, the part played by the various major and minor sports in undergraduate life. The sixty acres of playing fields of Cornell University adjoin the Forestry Building and may be used by students in the department for football, baseball, tennis, lacrosse, and other games and sports.

In the summer following the sophomore year the professional forestry student has his first extensive field work in the summer camp in civil engineering, where for five weeks, at some place on the picturesque shores of Cayuga Lake, he applies in actual surveys and topographic mapping the theory that he has had in the classroom and in local field trips.

The regular technical courses in forestry begin in the junior year, along with a general course in economics and advanced work in civil engineering, botany, and plant pathology.

Junior year is a red-starred one in many ways for the college man. As an upper-classman the junior is eligible to election as an officer in such an organization as the Forestry Club, with headquarters in a permanent club room in the Forestry Building, where frequent meetings are held throughout the college year, with occasional campfires and boat rides. In 1914, and again in 1915, members of this Forestry Club gave successful one-act plays as a part of the entertainment held in Farmers' Week, one of the annual features of the winter in the College of Agriculture. Socially, too, if he is so inclined, the junior may find many occasions that go to make this year one to be remembered.

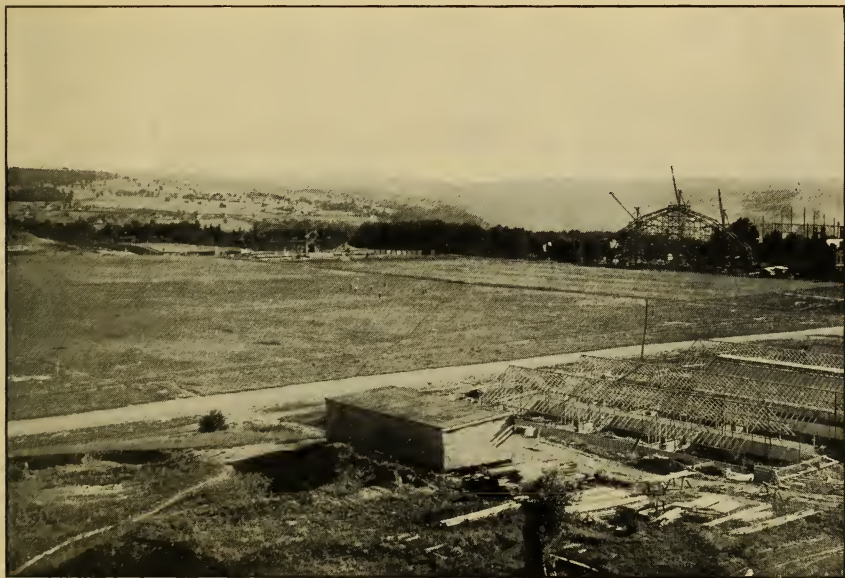
In the first term of the senior year, which is taken in the summer, the Department of Forestry, students and professors, moves bodily to its summer camp in a large forest tract in the Adirondacks, where stress is laid on practical field training in forestry under true forest conditions. This period of woods work, usually spent in a logging

camp, gives a part of the real experience without which no forester is worth his salt in the profession. This is a required part of the professional forestry course, and without it no regular student is admitted to the advanced courses.

In the senior year the student of professional forestry resumes his lecture and laboratory work at Ithaca, the better prepared for the courses in forest engineering, silviculture, forest protection, and forest policy, with certain electives in other departments which he should take to round out his training. At the Commencement in June, the degree Bachelor of Science, "with all the rights and privileges thereunto appertaining," is conferred on those who have satisfactorily completed the four years of undergraduate work.

Then follows, in the Graduate School, another summer in camp in the Adirondacks, or in some other large forest tract, spent in lectures and field demonstrations in forest management, and in research and advanced forestry work including the preparation of a thesis leading to the degree Master in Forestry. In the autumn term the graduate year in forestry culminates with a course in forest administration, the completion of the thesis, and finally the Master's examination. The successful candidates receive the degree Master in Forestry in February, and are then ready for their careers in public or private service.

The three-terms arrangement, whereby instruction in forestry is given in summer camps alternating with the more formal lecture and laboratory or field periods in Ithaca, is believed to give a training that will enable the graduate in forestry to work up to the most responsible positions that the profession has to offer. But naturally the attain-



LOOKING SOUTHWEST FROM THE FORESTRY BUILDING

The hill country at the head of Cayuga Lake in the far distance; in the center the athletic grounds and the Schoellkopf Memorial training house and new stadium; on the right the beginnings of the magnificent armory and drill hall, which will be the largest building on the campus; the large area beyond the greenhouses under construction in the foreground is Alumni Playing Field, where a thousand or more students play daily at baseball, lacrosse, tennis, and other sports

ment of a high place in forestry, as in any other profession, is the result of years of experience and faithful performance of duty. Training, plus personality, is the key to success; and since he who is most thoroughly trained will go farthest and highest, it is strongly recommended that students specialize during the latter years of their college course in one of the major divisions of forestry—forest management, forest protection, forest administration, or forest utilization. Unusual facilities are offered at Cornell University for advanced study and research along these lines, and also in forest entomology and forest pathology.

On application, the Department of Forestry will be glad to correspond with prospective forestry students regarding the opportunities for employment, in public or private service, open to graduates who have received the degree Master in Forestry.

AIMS OF THE DEPARTMENT OF FORESTRY

From the foregoing statements it is clear that one of the aims of the Department of Forestry of the New York State College of Agriculture at Cornell University is to give instruction. It has two other main aims, perhaps equally as important—to conduct research, and to give direct help to owners of forest lands in New York State.

As regards research it will be recalled that at Ithaca is situated the Cornell University Agricultural Experiment Station, which works in cooperation with the federal Department of Agriculture, and with which the Department of Forestry is directly affiliated. Both graduate and undergraduate students have opportunity to come in close touch with the experiment station investigations. In the research study, which forms a part of the work of the graduate year, the students may actually have a part in such experiments and investigations.

To help owners of woodlands and forest in New York State the Department of Forestry has one professor whose duty it is to be of direct help through correspondence, through lectures, and through personal inspection of woodlands or of land to be planted to forest. The Department has established demonstration areas of properly managed forests in various parts of the State. It is prepared to assist in the cooperative care of forest lands. Any resident of the State of New York may call upon the faculty of the Department of Forestry for advice on any forest problem. Other than the necessary expenses for travel and subsistence when a personal inspection of the locality is required, there is no charge for this service.

EQUIPMENT

The Department of Forestry occupies its own Forestry Building, recently built by the State at a cost of \$120,000, and dedicated to the study of forestry on May 16, 1914. The building is one hundred and forty-two feet long by fifty-four feet wide, and four stories in height. A portion of the building is being occupied temporarily by the Department of Plant Breeding, but the entire building is planned for the Department of Forestry and is to be used exclusively by that Department as soon as a building for the Plant Breeding Department is provided. The building is thoroughly equipped, and affords ample opportunities for undergraduate instruction and for advanced study.

The Department has a tract of about one hundred and seventy-five acres of open land which is being used for forest planting; another tract of thirty-eight acres, partly open and partly wooded; and eight woodlots, including stands of white pine, hardwoods, and hemlock. All these lands are within three miles of the university campus. The Department has planted more than seventy acres of its land with experimental and demonstrational plantations. There is also a forest nursery.



AN ADIRONDACK LAKE

Typical of the forested region in which the Summer Term of the Cornell Forest School is spent

A forestry library of more than fourteen hundred bound volumes, including files of forestry periodicals, is included in the University Library. The Department has an excellent collection of forestry instruments.

REQUIREMENTS FOR ADMISSION

The following classes of students are admitted to the work of the Department of Forestry of the New York State College of Agriculture:

1. Persons who desire to begin, as freshmen, the regular undergraduate course leading to the degree of Bachelor of Science.
2. Persons who have already attended some college or university and desire to enter with advanced standing.
3. Persons who desire admission as graduate students, candidates for the degree Master in Forestry.
4. Persons who desire admission as graduate or as special students but not as candidates for a degree.

Students are admitted on examination, or on presenting credentials of the University of the State of New York, or on acceptable school certificates. It is strongly recommended that, when possible, prospective forestry students shall include solid geometry and plane trigonometry among the elective subjects offered for admission.

Further information regarding entrance as a freshman and admission to advanced undergraduate standing may be obtained by addressing The Registrar, Cornell University, Ithaca, New York; requests for the General Circular of Information (containing details regarding entrance requirements and other information for prospective students) should be addressed to The Secretary, Cornell University.

Correspondence regarding admission as a graduate student, and requests for copies of the Announcement of the Graduate School, should be sent to the Dean of the Graduate School, Cornell University.



A NEW YORK STATE WOODLOT AFTER AN IMPROVEMENT THINNING

Candidates for the degree Master in Forestry, admitted as graduate students, must have had training substantially equivalent to the first four years of the professional forestry course given at Cornell University, and also at least three months experience in forestry work or in a logging camp, satisfactory proofs of which must be furnished. A student entering the Graduate School as a candidate for the degree Master in Forestry should enter at the beginning of the third (summer) term; otherwise it will be difficult to arrange his work satisfactorily.

Students who enter as graduates without having had undergraduate instruction in forestry should be able to complete the work for the Master's degree in two years if they have had the equivalent of most of the courses, other than forestry, required of undergraduates in the Department of Forestry.

Work for the degree Doctor of Philosophy may also be done in forestry.

Prospective forestry students, of whatever class, are urged to correspond with the Department of Forestry for general information regarding the courses desired.

EXPENSES

Tuition. Tuition in the New York State College of Agriculture is free to both graduate and undergraduate students who for a year or more immediately preceding admission have been residents of the State of New York. The annual tuition fee for both regular and special students from outside the State is \$125. All the work of a graduate student, candidate for the degree of Master in Forestry, will be in the College of Agriculture.

Other fees and expenses. Other fees are as follows: matriculation fee, paid when entering the University, \$5; fee for baccalaureate degree, \$10; fee for advanced degree, \$20; infirmary fee, \$3 a term. Laboratory fees are required in various courses. The fee for the summer camp in surveying, in the summer following the sophomore

year, is \$35, which includes board and lodging for six weeks. The expenses of the third term camp, in the summer following the junior and senior years, were, in 1915: for board in camp, ten weeks, \$55; for railroad fares, about \$15.

The expense for textbooks, instruments, and the like, varies from \$10 to \$75 a year. The cost of living in Ithaca, including board, room, heat, and light, varies from \$5.50 to \$10 a week.

Information regarding opportunities for self-support may be obtained from the Cornell University Christian Association and from the Secretary of the University.

COURSES OF INSTRUCTION IN FORESTRY

The following paragraphs outline more in detail the work of the professional forestry students. For a complete description of the various courses offered, with hours, credits, laboratory fees, and the like, the Announcement of the New York State College of Agriculture for the current year should be consulted. This publication will be sent, postage prepaid, on application to the Secretary of the College of Agriculture, Cornell University, Ithaca, New York.

For students who wish only general instruction in forestry, six courses are offered as directly designed to meet their requirements. There are also open to such students a number of other courses, if they can meet the necessary prerequisites.

For special students who, either as graduates or as undergraduates, desire courses in forestry but are not candidates for a degree, work will be arranged to suit individual needs.



A Cornell Forestry Student learning the life history of a tree by means of an increment borer



For professional forestry students, the sequence of studies given below is recommended and will prove desirable for most students. It is to be understood, however, that this is not a curriculum required of all students. Deviations from it will be made for students entering the course with advanced standing, and for other students whenever advisable. Freshmen who are planning to take the professional forestry course are urged to consult the Department of Forestry at the beginning of the first college year.

FRESHMAN YEAR

First term	Second term
English	English
Inorganic Chemistry	Agricultural Chemistry
Biology	Biology
The Farm	Drawing
Solid Geometry	Plane Trigonometry

If the courses in mathematics are offered for admission, as is advised, meteorology should be taken in the freshman year.

SOPHOMORE YEAR

First term	Second term
Botany	Experimental Physics
Dynamic Geology	Plant Physiology
Elementary Mineralogy	General Lithology
Elementary Surveying	Advanced Surveying
General Entomology	Forest Insects
	Forge Work

SUMMER FOLLOWING SOPHOMORE YEAR

Summer camp for five weeks. Surveying and topographic mapping on the shores of Cayuga Lake.

JUNIOR YEAR

First term	Second term	Third term (summer)
Political Science	Political Science	(Six weeks in Ithaca, ten weeks in Cornell Forestry Camp in the Adirondacks.)
Wood Technology	The Field of Forestry	All forestry courses)
Systematic Zoology	Forest Regions	Forest Mensuration
Plant Pathology	Control of Tree Diseases	Forest Utilization
Dendrology	Systematic Zoology	Forest Ecology
Mapping and Surveying	Soil Management	Silviculture—Care of the Forest
Computations	Mapping and Surveying Computations	

SENIOR YEAR

First term (autumn)

Three months of practical work in the forest. This period of practical work is prerequisite to admission to regular standing in the advanced courses in forestry.

Second term (spring)

(At Ithaca)

Forest Engineering
Forest Planting
Forest Protection
Forest Policy, Law, and History
Aquiculture
Landscape Art
Farm Mechanics

The degree Bachelor of Science is conferred at the end of the senior year.

GRADUATE YEAR

Third term (summer)

(At Ithaca and in Forestry Camp)

Forest Management
Seminary
Advanced Work
Research
Preparation of Thesis

First term (autumn)

(At Ithaca)

Forest Administration
Seminary
Advanced Work
Research
Completion of Thesis

The degree Master in Forestry is conferred in February on those who have successfully completed the professional course.



CORNELL STUDENTS SURVEYING AND MAPPING FOREST AREAS



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